Intraoperative Cesarean Section During Robotic Inguinal Hernia Repair

Migdalia Saloum M.D., Babak Tavakoli M.D.
US Anesthesia Partners, North Texas – Arlington Division

Case Report

- 40 year old G10P7 @ 35.4 weeks
- Presents to ER with fever/nausea and a painful mass in the left groin
- CT scan shows incarcerated inguinal hernia
- Past medical history: Previous DVT on Enoxaparin, MI with stent placement 8 years ago, asthma, smoker, anxiety
- General surgeon determines patient needs emergent surgery and plans laparoscopic/robotic approach
- Maternal fetal medicine consult: plan to avoid immediate delivery of fetus and agree to surgery with pre and post procedure fetal monitoring
- Patient desires sterilization and is consented for possible emergent cesarean delivery with tubal ligation
- patient undergoes robotic assisted laparoscopic inguinal hernia repair under General anesthesia
- Obstetrician is present in OR during procedure
- Veress needle inserted at costal margin above uterus and pressure is kept below 12mmHG throughout
- Four 8mm trocars inserted in upper abdomen and one 5mm trocar in left upper quadrant
- Surgeon finds incarcerated sigmoid colon with an adherent small bowel via a fistula – procedure is anatomically challenging with gravid uterus not allowing for space to reduce or repair hernia

US ANESTHESIA PARTNERS™

- 2 hours into procedure, decision is made to convert to open and deliver fetus via cesarean section to facilitate procedure
- Obstetrician performs Cesarean with low transverse incision and tubal ligation. Baby is delivered and taken to NICU
- Surgery proceeds – sigmoid colectomy with end colostomy and resection of terminal ileum with anastomosis
- 1000ml EBL with cesarean and 500ml EBL with surgery

US ANESTHESIA PARTNERS™

- Blood pressure is difficult to maintain and blood transfusion is given intraop – uterus tone is adequate
- Patient is extubated
- POD #1 patient is in severe pain at pfannestiel incision site and receives TAP block. Pain is not relieved
- POD #2 still in significant pain, no flatus or stool
- POD #3 pain, febrile, tachycardic. CT shows small pneumoperitoneum and free fluid
- patient undergoes diagnostic laparoscopy for repair of perforation at anastomosis site and I&D of abscess.
- Patient remains intubated, septic/acidotic, requiring pressor support in ICU
- POD #4 repeat diagnostic laparoscopy for continuing leak at anastomosis site
- Patient makes full recovery after 13 day admission

Discussion

- Between 1-2% of pregnant women require nonobstetric surgery during pregnancy
- Most common risks to fetus:
  - C-section > Low birth weight > preterm delivery > stillbirth
- The most frequent are intrabdominal surgeries (appendectomies, cholecystectomies, adnexal masses)
- Laparoscopic surgery during pregnancy is becoming increasingly common as surgeons continue to become more proficient with this technique, and the maternal/fetal risks are proving to be low
- The conventional concerns for laparoscopic surgery – pneumoperitoneum decreasing uteroplacental perfusion, fetal acidosis from hypercarbia, uterine or fetal perforation by trocar or veress needle have a limited effect
- surgeon preference is important – if surgeon is more proficient in laparoscopy vs. laparatomy, surgical times and complications are minimized

- Laparoscopic surgery has the same benefits in pregnant patients as non pregnant – shorter hospital stay, earlier return of bowel function, less pain
- Strategies to reduce maternal/fetal complications during laparoscopic surgery
  - Maintain low pneumoperitoneum. 8-12 mmHg, max 15mmHg
  - EtC02 32-34 mmHg
  - Trocars inserted above the uterus (supraumbilical to subxiphoid)
  - Uterine displacement - can be achieved with left lateral tilt of surgical table
  - Physiologic tolerance of Trendelenburg depend on habitus and gestational age
- ACOG 2020 committee opinion key points
  - Pregnant patient should never have medically necessary surgery denied or delayed regardless of gestational age
  - Obsterical provider with cesarean delivery privileges should be readily available
  - Decision to use fetal monitoring should be individualized and dependent of fetal age, type of surgery, and resources available

1. AM Surg 2017; 266(2):260 **2.** BMJ open. 2019;9(5): e028136. Epub 2019 May 19 **3.** Surg Gynecol Obstet 1993: 177:371 **4.** ACOG committee Opinion N0. 775. Obstet Gynecol 2019: 133:e285

US ANESTHESIA PARTNERS